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Interleaving based model checking of concurrency and causality. (English) Zbl 1397.68123
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Summary: We consider a spectrum of properties proposed in [*A. Polyvyanyy et al., Lect. Notes Comput. Sci.* 8489, 210–232 (2014; [Zbl 1393.68123](#))]. It is related to causality and concurrency between a pair of given transitions in a place/transition net. For each of these properties, we ask whether it can be verified using an ordinary, interleaving based, model checker. With a systematic approach based on two constructions, we reduce most properties in the spectrum to a reachability problem. Only one problem needs to be left open completely. Some problems can be solved only under the assumption of absent auto-concurrency.

MSC:

- [68Q60](#) Specification and verification (program logics, model checking, etc.)
- [68Q85](#) Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.)

Full Text: [DOI](#)